

Wednesday, March 4th

Sorry I am missing you guys tonight, Mr. Nick Cook is awesome and will take good care of you!

Goals for tonight:

- review trig and determine areas of need and strength
- be able to convert between imperial and metric units
- be able to calculate and optimize area and perimeter of 2D shapes

**Task 1 - Trig PRACTICE quiz**

Take 30 minutes and work independently on this quiz with your notes and reference sheets. I will provide these on the quizzes and tests. Then, take 15 minutes and work with a partner to compare answers and discuss. Last, Nick will take it up with you.

**Task 2 - Unit Conversion**

Please copy down these notes with Nick...

Algebra Check In - solve for x.

$$\begin{aligned} 1) \frac{x}{4} &= \frac{6}{7} & 4 \cdot \frac{x}{4} &= 4 \cdot \frac{6}{7} \\ x &= \frac{4(6)}{7} & x &= \frac{4 \cdot 6}{7} \\ x &= \frac{24}{7} \end{aligned}$$

$$\begin{aligned} 2) \frac{5}{x} &= \frac{3}{8} \\ \frac{x}{5} &= \frac{8}{3} & \text{when x is on the bottom, flip both sides! it usually makes your life easier} \\ x &= 5 \cdot \frac{8}{3} \\ x &= \frac{40}{3} \end{aligned}$$

Now, let's look at actual units!

We know that there are 100cm in a metre. How many cm are in 3.27m?

The easiest way I have found to set this up is to make a chart and solve. We are using cm and m so those are the headings of your chart.

| cm  | m    |
|-----|------|
| 100 | 1    |
| x   | 3.27 |

This is what we know

This is what we want to know

Now, let's make 2 fractions and solve for x.

$$\begin{aligned} \frac{100}{x} &= \frac{1}{3.27} \\ \frac{x}{100} &= \frac{3.27}{1} \\ x &= 3.27 \cdot 100 \\ x &= 327 \end{aligned}$$

Therefore there are 327cm in 3.27m

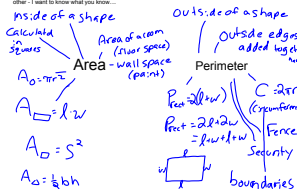
**Example 2** - If 3ft=36 inches, how many inches are in 10feet?

$$\begin{aligned} \frac{3}{10} &= \frac{36}{x} \\ \frac{10}{3} &= \frac{x}{36} \\ \frac{10}{3} &= \frac{x}{36} \end{aligned}$$

**Try - Imperial and Metric Conversion Worksheet! Show your work.....**

**Task 3 - Area and Perimeter**

Brainstorm here... what is area? what do you remember... put your thoughts on the Smartboard with each other... I want to know what you know...



Area - the amount of space an object covers Perimeter - the distance around the outside of an object

**Examples**

1) Calculate the area and perimeter of the following



$$\begin{aligned} A &= s^2 \\ A &= 5^2 \\ A &= 25 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} P &= 4s \\ P &= 4(5) \\ P &= 20 \text{ cm} \end{aligned}$$



$$\begin{aligned} A &= \pi r^2 \\ A &= \pi (3)^2 \\ A &= \pi (9) \\ A &= 28.26 \text{ cm}^2 \end{aligned}$$



$$\begin{aligned} a^2 + b^2 &= c^2 \\ 3^2 + 4^2 &= c^2 \\ 9 + 16 &= c^2 \\ 25 &= c^2 \\ c &= 5 \end{aligned}$$

$$P = 2l + 2w \quad A = lw$$

**Try - Optimizing area and perimeter task - answers are posted on the wiki**

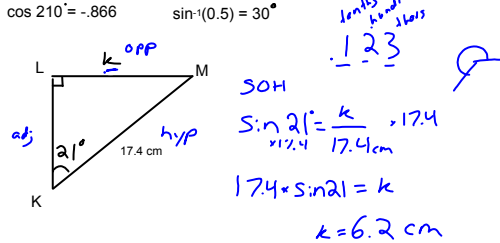
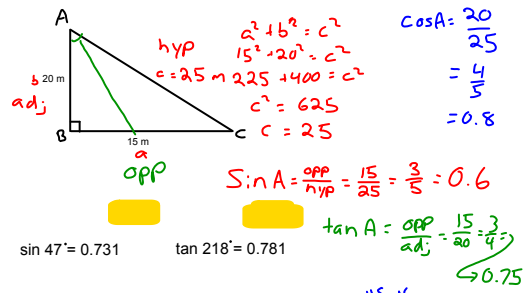
[vlog.wikispaces.com](http://vlog.wikispaces.com)  $P = 2(l + w)$   $A = lw$

$$w = 10 \quad l = ? \quad P = 200$$

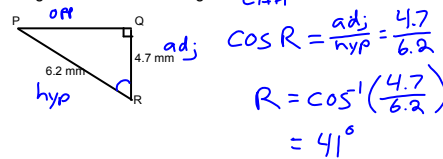
$$\begin{aligned} P &= 2l + 2w \\ 200 &= 2l + 2(10) \\ 200 &= 2l + 20 \\ 200 - 20 &= 2l \\ 180 &= 2l \\ 90 &= l \end{aligned}$$

$$\begin{aligned} 3l &= 64 \\ l &= \frac{64}{3} \\ l &= 21.3 \end{aligned}$$

If there's time... let's talk about a composite shape...

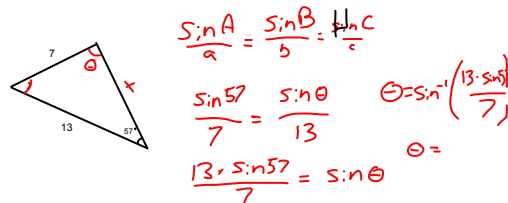


4. Find angle R to the nearest degree. CAH

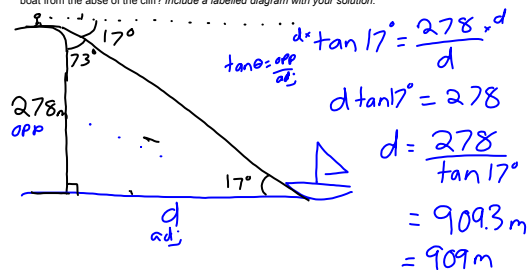


5. Solve the following triangle

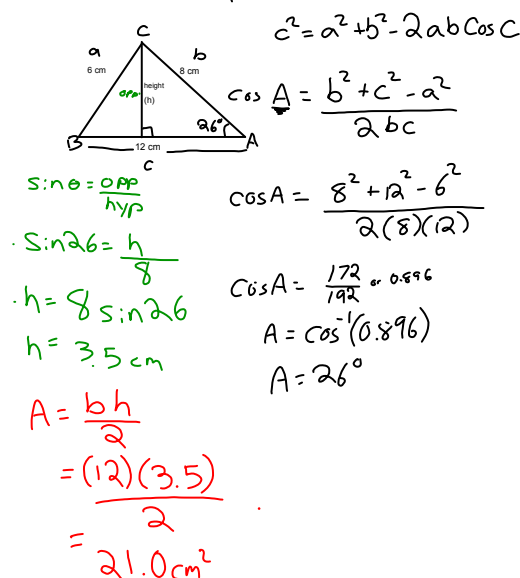
Round all side lengths to the nearest tenth and all angles to the nearest degree



6. From the top of a cliff 278 m high, the angle of depression to a boat out at sea is  $17^\circ$ . How far is the boat from the base of the cliff? Include a labelled diagram with your solution.



7. Determine the area of the triangle.  $A = \frac{bh}{2}$ . Accurate to the nearest tenth of a unit.



1. a)  $2500 \text{ m}^2$

b)  $50 \text{ m} \times 50 \text{ m}$

c) Square

d)  $P = 4l$

$$l = \frac{P}{4}$$

2. a)

| w | l    | A  |
|---|------|----|
| 3 | 21.3 | 64 |

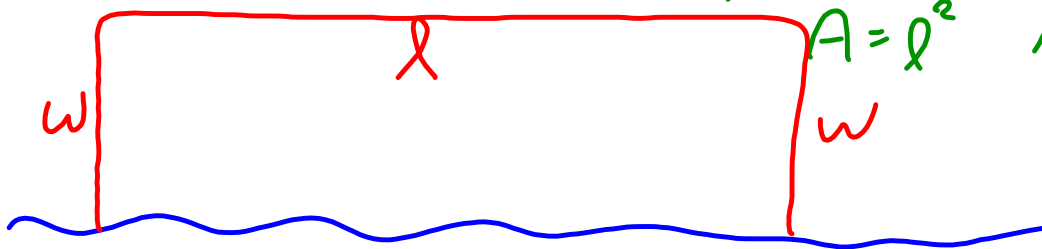
$$P = 2l + 2w$$

a) 32 ft

b)  $8 \text{ ft} \times 8 \text{ ft}$

c) Square

d)  $A = lw$   
 $A = l^2$   $l = \sqrt{A}$



| L  | w   | P   |
|----|-----|-----|
| 50 | 125 | 300 |

$$P = 2w + l$$

$$300 = 2w + 50$$

$$300 - 50 = 2w$$

$$250 = 2w$$

$$w = 125$$